REMARKS

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fathimulla et al. (U.S. Patent No. 5,338,394) and Pearton et al. (Applied Physics Letters 60 (7)).

Applicant respectfully traverses the rejection. The Examiner states in part that: "Fathimulla describes a method for etching an III-V material comprising: placing the III-V substrate into a RIE chamber and etching the substrate with a gas mixture of HBr and CH_4 (claims 1-4). Unlike claimed invention, Fathimulla doesn't describe the gas mixture having H_2. Pearton teaches a method for etching III-V material wherein the gas mixture includes H_2 (pages 839; left column). It would have been obvious for one skilled in the art at the time of the invention to modify Fathimulla in light of Pearton by including H_2 in the gas mixture because Pearton teaches addition of the H_2 to the gas mixture provide a much smoother surfaces and Fathimulla teaches that other combinations of gas composition can be used to give a smooth vertical feature (col. 3, line 65-68)".

The Examiner cite *In Re Keller*, 642, F.2d 413 for the proposition that one cannot show nonobviousness by attacking the references individually where rejections are based on combinations of references. The Examiner has apparently failed to understand the Applicant's argument. The Applicant's argument is that Examiner has failed to make a *prima facie* case of obviousness and has therefore failed to meet his burden. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of

success. Finally, the prior art reference (or references when combined) must reach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991).

Fathimulla discloses using HBr and CH_4 **or** HBr and H_2 together (see col. 2, lines 14-18) but **not** HBr, CH_4 and H_2 together. Faithmulla does not disclose the use of HI. There is a teaching away by Fathimulla of using both CH_4 and H_2 in the same mixture for smooth surfaces as these gases are always recited by Fathimulla in the **alternative**, e.g.: "H_2 **or** CH_4 is introduced into the ECR region" (emphasis added) (see col. 2, lines 56-57) and [s]mooth surfaces can be produced by reactive ion etching using a mixture of $SiCl_4$, and H_2 **or** CH_4. (emphasis added) (col. 3, lines 59-61). This would not motivate one skilled in the art to use both H_2 and CH_4 together.

Pearton teaches **replacing** a CH_4, H_2 and Ar mixture with a HI, H_2 and Ar mixture (e.g. ,see bottom of col.2, p. 838 and first full paragraph, col. 2, p. 840). Thus, Pearton also teaches away from using CH_4 and H_2 together. This would **not** motivate one skilled in the art to combine the two references and modify Faithmulla in light of Pearton to use both H_2 and CH_4 together with HI. Hence, the Examiner has failed to make a prima facie case of obviousness because there is no motivation to combine and further, the teaching away of using CH_4 and H_2 together by both Fathimulla and Pearton is, in fact, an important indicium of nonobviousness (see U.S. v. Adams, 383 U.S. 39 1966 and In re Hedges, 783 2d 1038, Fed. Cir. 1986). Hence, Claims 1-20 are allowable over Fathimulla in view of Pearton.

Examiner provisionally rejects under the judicially created doctrine of obviousness double patenting Claims 1-20 as being unpatentable over copending Application 10/692,772. Applicant is submitting a terminal disclaimer to overcome Examiner's rejection.

Therefore, Claims 1-20 are in condition for allowance and allowance is respectfully requested. Should the Examiner wish to discuss any aspect of the application he is invited to telephone the undersigned at (650) 485-5904.

Respectfully submitted,

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